

What is claimed is:

1. A communication protocol for initiating a communication session through a network translation device which translates internal network traffic having an internal addresses and ports into external traffic having an apparent external origin address and port, the protocol comprising:

preparing a session setup for a session from a first machine having the non-routable network address to a second machine, the session setup indicating a non-routable address to which to send a session acknowledgement; and

sending the session setup to the second machine through the network translation device, wherein said network translation device does not translate the session setup;

wherein the second machine is configured to inspect the session setup and identify the session setup includes the non-routable address.

2. The protocol of claim 1, further comprising:

including a first port in said session setup for communicating with a communication endpoint;

wherein translation by the network translation device results in the session setup having an apparent origin and a second port different from the non-routable address and the first port in said session setup, and wherein the second machine is configured to inspect said protocol data and identify the non-routable address.

3. The protocol of claim 2, wherein said endpoint is a selected one of: the second machine, and a registration server for registering communication endpoints.

4. The protocol of claim 1 further comprising the network address translation device:

receiving the session setup for the session to the second machine;

5 sending the session setup to the second network address;

recording said sending in an access authorization table;

receiving data from a network; and

comparing said received data with at least a portion of the access authorization table the entry to determine if said received data is responsive to said sending.

10 5. The protocol of claim 1, wherein the second machine is a registration server for registering machine aliases with network addresses, the protocol further comprising the registration server:

15 receiving the session setup, said session setup comprising said protocol data including an alias for the first machine;

examining said protocol data so as to identify whether it comprises the non-routable network address; and

if so, registering the first machine with respect to the alias and the routable address.

20 6. The protocol of claim 1, wherein the second machine is an endpoint to the session, the protocol further comprising the second machine:

receiving the session setup;

determining the session setup indicates sending the session acknowledgement to the non-routable address; and

sending the session acknowledgement to the first machine at the routable address.

5

7. The protocol of claim 6, further comprising the network translation device: receiving the acknowledgement for the first machine; and translating the session acknowledgement for delivery to the non-routable

address.

8. A method for communicating between a first endpoint behind a network address translator (NAT) and a second endpoint, comprising:

receiving a first registration for the first endpoint, said registration comprising an embedded address, embedded port and embedded alias for the first endpoint, wherein said registration has an apparent origin address of the NAT;

determining the embedded network address is a non-routable address; and

registering the first endpoint with the apparent origin address, embedded port, and embedded alias.

20

9. The method of claim 8, further comprising: receiving from the second endpoint a resolution request for the alias; replying to said request with at least the apparent origin address; receiving a session setup from the second endpoint; and

forwarding the session setup to the first endpoint at the apparent origin address.

10. The method of claim 9, further comprising:

5 sending an acknowledgement through the NAT to the second endpoint, the acknowledgement comprising the non-routable address and a dynamically assigned port of the first endpoint;

determining by the second endpoint whether the second network address is routable; and

10 if so, waiting by the second endpoint for audiovisual data to be sent to the second endpoint from the first endpoint.

15 11. An apparatus for initiating a session through a network translation device that does not translate protocol data, said apparatus comprising a readable medium having instructions encoded thereon for execution by a processor, said instructions capable of directing the processor to perform:

preparing a session setup for a session from a first machine having the non-routable network address to a second machine, the session setup indicating a non-routable address to which to send a session acknowledgement; and

20 sending the session setup through the network translation device to a second machine configured to inspect the session setup to identify if the session setup includes non-routable addresses.

12. The apparatus of claim 11, said instructions including further instructions capable of directing the processor to perform:

including a first port in said session setup for communicating with a communication endpoint;

5 wherein translation by the network translation device results in the session setup having an apparent origin and a second port different from the non-routable address and the first port in said session setup, and wherein the second machine is configured to inspect said protocol data and identify the non-routable address.

13. The apparatus of claim 12, wherein said endpoint is a selected one of: the second machine, and a registration server for registering communication endpoints.

14. The apparatus of claim 11, said instructions including further instructions capable of directing the processor to perform:

receiving the session setup for the session to the second machine;

sending the session setup to the second network address;

recording said sending in an access authorization table;

receiving data from a network; and

comparing said received data with at least a portion of the access authorization

20 table the entry to determine if said received data is responsive to said sending.

15. The apparatus of claim 11, wherein the second machine is a registration server for registering machine aliases with network addresses, said instructions including further instructions capable of directing the processor to perform:

receiving the session setup, said session setup comprising said protocol data  
5 including an alias for the first machine;

examining said protocol data so as to identify whether it comprises the non-routable network address; and

if so, registering the first machine with respect to the alias and the routable address.

10 16. The apparatus of claim 11, wherein the second machine is an endpoint to the session, said instructions including further instructions capable of directing the processor to perform:

receiving the session setup;

15 determining the session setup indicates sending the session acknowledgement to the non-routable address; and

sending the session acknowledgement to the first machine at the routable address.

20 17. The apparatus of claim 16, said instructions including further instructions capable of directing the processor to perform:

receiving the acknowledgement for the first machine; and

translating the session acknowledgement for delivery to the non-routable address.

18. An apparatus for communicating between a first endpoint behind a  
5 network address translator (NAT) and a second endpoint, said apparatus comprising a readable medium having instructions encoded thereon for execution by a processor, said instructions capable of directing the processor to perform:

receiving a first registration for the first endpoint, said registration comprising an embedded address, embedded port and embedded alias for the first endpoint, wherein  
10 said registration has an apparent origin address of the NAT;

determining the embedded network address is a non-routable address; and

15 registering the first endpoint with the apparent origin address, embedded port, and embedded alias.

19. The apparatus of claim 18, said instructions including further instructions  
20 capable of directing the processor to perform:

receiving from the second endpoint a resolution request for the alias;

replying to said request with at least the apparent origin address;

receiving a session setup from the second endpoint; and

25 forwarding the session setup to the first endpoint at the apparent origin address.

20. The apparatus of claim 19, said instructions including further instructions capable of directing the processor to perform:

sending an acknowledgement through the NAT to the second endpoint, the acknowledgement comprising the non-routable address and a dynamically assigned port of the first endpoint;

5 determining by the second endpoint whether the second network address is routable; and

if so, waiting by the second endpoint for audiovisual data to be sent to the second endpoint from the first endpoint.

21. A method for a first endpoint internal to a network translation device to set up a communication session with a second endpoint external to the network translation device, the method comprising:

contacting a registration server to resolve an alias for the second endpoint;

15 receiving a first session registration from the registration server, the first session registration comprising a network address for the second endpoint that is routable, and a content port to which content should be sent to for the second endpoint; and

priming the network translation device, by sending at least one network packet to the second endpoint at the routable address on the content port, before completing setting up the communication session with the second endpoint.

20 22. The method of claim 21, further comprising:

sending a second session registration for the first endpoint to the registration server, the second session registration comprising a network address for the first endpoint that is non-routable.



23. The method of claim 22, further comprising the registration server:

receiving the second session registration for the first endpoint from a routable network address associated with the network translation device;

5 identifying that the second session registration comprises a network address that is non-routable, and responsive thereto, registering the first endpoint with respect to the routable network address associated with the network translation device;

receiving the first session registration for the second endpoint; and

10 identifying that the second session registration comprises a network address that is routable, and responsive thereto, registering the first endpoint in accord with the first session registration.

24. The method of claim 22, further comprising:

15 wherein the registration server is configured to identify the non-routable network address within the second session registration, and responsive to said identifying, registering the first endpoint with respect to a routable address associated with the network translation device.

25. An apparatus for a first endpoint internal to a network translation device to

20 set up a communication session with a second endpoint external to the network translation device, said apparatus comprising a readable medium having instructions encoded thereon for execution by a processor, said instructions capable of directing the processor to perform:

contacting a registration server to resolve an alias for the second endpoint;

receiving a first session registration from the registration server, the first session registration comprising a network address for the second endpoint that is routable, and a content port to which content should be sent to for the second endpoint; and

5 priming the network translation device, by sending at least one network packet to the second endpoint at the routable address on the content port, before completing setting up the communication session with the second endpoint.

26. The apparatus of claim 25, said instructions including further instructions capable of directing the processor to perform:

10 sending a second session registration for the first endpoint to the registration server, the second session registration comprising a network address for the first endpoint that is non-routable.

15 27. The apparatus of claim 26, said instructions including further instructions capable of directing the processor to perform:

receiving the second session registration for the first endpoint from a routable network address associated with the network translation device;

20 identifying that the second session registration comprises a network address that is non-routable, and responsive thereto, registering the first endpoint with respect to the routable network address associated with the network translation device;

receiving the first session registration for the second endpoint; and

identifying that the second session registration comprises a network address that is routable, and responsive thereto, registering the first endpoint in accord with the first session registration.

5           28.    An apparatus for a first endpoint internal to a network translation device to set up a communication session with a second endpoint external to the network translation device, said apparatus comprising:

          resolving means for contacting a registration server to resolve an alias for the second endpoint;

          receiving means for receiving a first session registration from the registration server, the first session registration comprising a network address for the second endpoint that is routable, and a content port to which content should be sent to for the second endpoint; and

          priming means for priming the network translation device, by sending at least one network packet to the second endpoint at the routable address on the content port, before completing setting up the communication session with the second endpoint.

29.    The apparatus of claim 28, further comprising:

20           sending means for sending a second session registration for the first endpoint to the registration server, the second session registration comprising a network address for the first endpoint that is non-routable.

30.    The apparatus of claim 29, further comprising:

receiving means for receiving the second session registration for the first endpoint from a routable network address associated with the network translation device;

identifying means for identifying that the second session registration comprises a network address that is non-routable, and responsive thereto, registering the first endpoint with respect to the routable network address associated with the network translation device;

receiving means for receiving the first session registration for the second endpoint; and

identifying means for identifying that the second session registration comprises a network address that is routable, and responsive thereto, registering the first endpoint in accord with the first session registration.

10